

THE INFLUENCE OF STUDENT ABSENCES  
ON GRADE POINT AVERAGE IN HIGH SCHOOL

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A Field Report  
Presented to  
The School of Graduate Studies  
Drake University

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Master of Science in Education

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by  
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# THE INFLUENCE OF STUDENT ABSENCES ON GRADE POINT AVERAGE IN HIGH SCHOOL

An abstract of a Field Report by  
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The problem. This study was undertaken (1) to examine the extent that high school attendance level affects grade point averages, (2) to examine the interaction between the effects of intelligence and attendance levels on grade point averages.

Procedure. A two way ANOVA was performed using grade point average as the dependent variable and attendance levels and intelligence as the independent variables. The grade point average was figured on a ratio scale and the independent variable of intelligence and attendance were categorized so ANOVA could be used.

Findings. This study clearly shows that the number of days absent from school has a detrimental effect on grade point average. Across all intelligence categories, grade point averages steadily decrease as absences increase. There is no interaction between the effects of attendance levels and intelligence scores on grade point averages.

Conclusions. This study shows that students can effectively improve their grade point averages by making a conscientious effort to attend school regularly.

Recommendations. There is a need to improve students' attendance levels and for students to recognize the relationship between attendance levels, grade point averages and achievement of educational excellence in their high school years. Students, parents and educational staff need to be made more aware of how absences contribute to the problem of lower educational achievement.

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## CHAPTER ONE

### Introduction

#### Statement of the Problem

In the state of Iowa school attendance is compulsory until a student reaches the age of sixteen. Students who attend school regularly should benefit from classroom instruction and are expected to achieve academically to the best of their ability.

The attendance level of high school students at Pella Community High School has remained over 90 percent for the past 32 years. Attendance percentages during that period for which records are available have varied from a high of 97.2 percent to a low of 94.2 percent. This percentage is based on student absences divided by average daily membership of the high school population.

Attendance policies at Pella Community High School were revised in 1974 and in 1981. After the 1981 policy was enforced, absences increased one full percent. At this time a desire to improve attendance levels and to recognize its relationship to grade point average was noted by school administrators. A method was also sought to make students more responsible for their own attendance and to make them more aware of the

importance of school attendance in attaining educational excellence.

There is much public and parental support for quality education within the Pella community. To be able to show that high attendance levels can improve grade point averages would demonstrate the need for excellent attendance to both the students and their parents. Parental support is needed to limit student absences for personal shopping, work at home, vacations, and non-emergency medical appointments.

### Purpose

The purpose of this study was (1) to examine the extent that high school attendance affects grade point averages and (2) to examine the interaction between the effects of intelligence and attendance levels on grade point averages. This information may then be used in making appropriate administrative decisions regarding attendance.

### Research Hypothesis and Prediction

Students attending classes regularly will have a higher grade point average than students not attending regularly.

Related studies have examined the effects of attendance on grade point average. Ziomek evaluated the relationship of Title I student achievement to



program and school attendance and concluded that high attendance and high achievement are related.<sup>1</sup> Rozelle concluded that students who attend classes less regularly earn lower grades.<sup>2</sup>

A study was made of students' absences from Pella Community High School for the school year 1984-85. For this study grade point averages were the dependent variable; attendance levels and intelligence scores were the independent variables. The control variable for this study was all high school students, grades ten through twelve at Pella Community High School in the 1984-85 school year. The research prediction was that public high school students in grades ten through twelve who have high attendance levels will have grade point averages significantly higher than those students who have low attendance levels.

#### Operational Definitions

The following operational definitions were used in this study:

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<sup>1</sup> Robert L. Ziomek, and William J. Schoenenberger, "The Relationship of Title I Student Achievement to Program and School Attendance," Elementary School Journal, (1983), 30.

<sup>2</sup> Richard M. Rozelle, "The Relationship Between Absenteeism and Grades," Educational and Psychological Measurements, 28 (1968), 4.

High School: The school division comprising grades 10, 11 and 12.

Public School: One of a system of schools maintained at public expense.

Secondary School: Synonym for high school.

Student: One who attends an educational institution of secondary level.

Student Performance: Academic knowledge and skills developed in school subjects usually designated by test scores or by grades assigned by teachers.

Attendance Level: The number of days present for instruction during the 1984-85 school year. Being absent one or fewer days per school year is a high attendance level. Average attendance level is being absent two to six days per school year. Being absent seven or more days is a low attendance level.

Grade Point Average: The average of grades assigned by teachers resulting from academic knowledge and skills developed in school subjects during the 1984-85 school year.

Improvement of Grade Point Average: A rise in grade point average.

Intelligence: Student's scores on the Lorge-Thorndike intelligence test for achievement.

### Limitations

History could be a factor affecting the internal validity of this study; therefore, historic happenings were examined as to their possible effects on the data used in this study. The last recorded change in attendance policies was two years previous to this study. All attendance records were kept by computer and compiled by the same staff member for the entire year. "Results from computer compiled attendance records give the best research studies."<sup>1</sup> No unusual illnesses, epidemics, or activities affected the attendance pattern for that school year. Permanent records have been recorded with the same information and treatment for the past four years.

### Selection of Sample

The population was all students enrolled at Pella Community High School in 1984-1985. All students enrolled as sophomores, juniors and seniors were used in this data collection.

Subjects selected from available permanent records were only those students who were still enrolled in the school system in 1985. Students who have dropped out

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<sup>1</sup> R. G. Stennett and L. M. Isaacs, "Absence From School: Patterns and Effects," Education Research, 1 (1980), 6.

or moved away are not included. Some students do not have a recorded intelligence test score because they transferred to this school after this test was administered. They too have not been included in this study.

#### Delimitations

This research was limited to Pella Community High School students in grades ten through twelve in 1984-85. The enrollment of students at the time of this study was 308.

## CHAPTER TWO

### Review of Literature

This review covers current literature concerning the relationship between high class attendance levels and high grade point average of public high school students in grades 10 through 12.

Basic reasons why high school attendance is required by the State of Iowa are to benefit the student, to help them adjust to society, to make the student responsible and to help them understand the values of society and relate these values to our school system.

It has taken a long time to convince parents that their children's education requires their child's presence at school and should take priority over other extenuating situations. In years past, youngsters attended school when there was nothing else to do. In 1839 Horace Mann persuaded the Massachusetts legislature to establish a minimum school year of six months. For many years attendance remained far below present standards of regularity especially in more rural areas. Reasons for absences included weather, lack of suitable clothing, illness, family needs and circumstances, and child labor outside the home.

"Reasons for absences from school today include: truancy, illness, parent-condoned absence, institutionally tolerated absence, and holiday vacations. In almost every research study, there is no differentiated treatment of these different kinds of absences. For practical purposes, relationships of absences from school to other factors are established by treating all absences as if they were the same."<sup>1</sup> Most research studies use a measure of absence which represents the number of days missed during a specified time, usually an academic term or year. How these records are tallied and kept influences their validity. "The nature of the school attendance records has a major bearing on the kind and quality of research done in the area of attendance. It is noteworthy that the best research studies have been conducted in school systems in which student attendance has been handled using computer-based reporting procedures."<sup>2</sup>

Early studies have been made in the area of attendance levels and its relationship to academic excellence. "A study was conducted in Minneapolis,

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<sup>1</sup> R. G. Stennett and L. M. Isaacs, p. 29.

<sup>2</sup> Ibid., p. 6.

Minnesota, at West High School on the 1934 graduating class. The total of days present was used as well as class grades and intelligence scores. For both boys and girls, the amount of attendance was related to school marks."<sup>1</sup> "Each day more than 2 1/2 million enrolled students are absent from American schools."<sup>2</sup>

"Girls tend to be absent more than boys at every grade. There appears to be a subset of students (5 to 8 % of all students) who show a pattern of chronically poor attendance of sufficient severity to involve their missing the equivalent of one full school year during their elementary years."<sup>3</sup> An earlier study, "showed a relationship between standardized test scores, average school marks, and attendance."<sup>4</sup> Students who achieved high standardized test scores and had high attendance records received higher school marks. It is impossible to teach students who are not in school, but simply requiring students to attend school does not

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<sup>1</sup> F. H. Finch and C. L. Nemzek, "Attendance and Achievement in High School," School and Society, (February 1935), 40.

<sup>2</sup> Jack L. Brimm, John Forgety, and Kenneth Sadler, "Student Absenteeism," National Association of Secondary Principals Bulletin, 62, No. 415 (1978), 65.

<sup>3</sup> Stennett and Isaacs, p. 6.

<sup>4</sup> C.W. Odell, "The Effects of Attendance upon School Achievement," Journal of Educational Research, (December 1923), 8.

mean that they will automatically reach educational goals.

Patterns of behavior seem to develop as absenteeism becomes a habit. "Absenteeism increases each year from ninth grade through twelfth grade. Students who live with both parents have a lower rate of absenteeism than those from single parent families. There is a significant correlation between attendance and class rank and IQ scores. Those with higher IQ's and higher class ranks have higher class attendance."<sup>1</sup> "Male students are more prone to absenteeism than females and juniors and seniors are absent more than their younger classmates. Students with higher grades are absent less. Absenteeism is more prevalent during second semester and most often on Mondays and Fridays."<sup>2</sup> This pattern of absences tends to worsen as the student reaches high school. Therefore according to these studies the advantages for the student who attends school should include improvement in their educational endeavors and accomplishments.

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<sup>1</sup> Joseph Levanto, "High School Absenteeism," National Association of Secondary Principals, (October 1975), 65.

<sup>2</sup> Brimm, Forgety, and Sadler, p. 67.



The educational process demands regular attendance to develop class participation and training for the future. No amount of make up work substitutes for these. "Frequent absences of pupils from regular classroom learning experiences disrupts the continuity of the instructional process. The school cannot teach students who are not present. Poor attendance limits accomplishments and reinforces a habit which handicaps the individual in future education or employment. The Board of Education requires the regular attendance of all students each day school is in session."<sup>1</sup> "A three year study of attendance records that confirmed that poor attendance contributes to poor grades."<sup>2</sup> Attendance policies have been adopted in many systems to comply with state law and to encourage student participation in academic pursuits.

A study was made of attendance records in the New Jersey Public Secondary Schools due to a New Jersey State Board of Education mandate to local school districts to establish attendance policies. "The

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<sup>1</sup> Peter J. Olivieri, "A Study of Changes in the New Jersey Public Secondary Schools, Due to the New Jersey State Board of Education Mandate to Local School Districts to Establish Attendance Policies," Research in Education, (August 1983), 23.

<sup>2</sup> Rozelle, p. 23.

comparison of student performance without and with an attendance policy revealed that the older students (juniors and seniors) with low I.Q. exhibited the most improved performance under the policy. The attendance of this group increased significantly from 161 to 166 days attendance out of a possible 180 days, while the number of course failure significantly decreased from .94 to .34. It appears that the older students with lesser ability at the secondary school level perform more favorably in their attendance and achievement than do other groupings of students when a restrictive and punitive policy for attendance exists."<sup>1</sup> There is some evidence to support the thesis that strict attendance policies do enhance academic performance, at least for some students at lower intelligence levels and older age groups. "The absenteeism rate is a particularly important intermediate outcome variable since students are less likely to be affected by classrooms they attend less frequently. If students are absent they cannot avail themselves of relevant learning opportunities and lose the continuity of course content which is crucial for learning. Students who attend classes less regularly earn lower grades.

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<sup>1</sup> Olivieri, p. 40.

Students who get high grades are more likely to be satisfied with school and may show more continuing motivation and interest in the course content."<sup>1</sup> It is generally assumed that students who miss classes are more likely to drop out than students who attend classes.

"Several other investigators have also shown that student's absence from school is related to their academic achievement (i.e. Douglas, 1965; Fogelman, 1978; Gussett, 1967; Hambleton, 1967; Karweit, 1973; Levanto, 1975; Moos, 1978; Rozelle, 1968; Stennett, 1979; Williams, 1976). If it is clear that absence from school has a negative effect on student achievement, it seems logical to assume that absence from school may be least detrimental to the most capable students and most detrimental to the least capable students. To assess the existence and size of this possible differential effect, the following analysis was conducted: (a) students were divided into three groups in terms of number of days absent in grade 7 (low absence - an average of 2 days; moderate absence and average of 7.5 days; and high absence - an average of 20 days). (b) Each of these groups was, in turn

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<sup>1</sup> Rudolph H. Moos and Bernice S. Moos, "Classroom Social Climate and Student Absences and Grades," Journal of Educational Psychology, 70 (1978), p.26.

divided into three groups based on their mental age. (This was used rather than IQ to eliminate the confounding effects of grade repetition and acceleration). The lower the students intellectual ability the more detrimental effect absence from school has on his achievement. Thus for the very capable students, even extreme absence has a relatively minor effect; whereas, for the least capable students, even moderate absence produces a modest detrimental effect."<sup>1</sup>

"A negative relationship between classroom absenteeism and academic performance was confirmed. Absenteeism is typically associated with lower earned grades and less than expected learning. Negative relationship was found between the number of absences and academic performance."<sup>2</sup>

There is a relationship between grade point average and attendance levels when looking at the student who drops out of school. "Students who miss classes and have low grade point averages are much more likely to

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<sup>1</sup> Stennett and Isaacs, p. 18.

<sup>2</sup> Charles M. Slem, "The Relationship Between Classroom Absenteeism and Stress Risk/Buffer Factors, Depressogenic Attributional Style, Depression and Classroom Academic Performance," Western Psychological Association, (April 1983), 4.

drop out of school than students with low grade point averages who attend classes. This might be explained by the idea that students who quit going to classes and who are doing poorly academically have given up, whereas students who are doing poorly academically but keep attending classes are trying, a higher number of these students stay in school than those who have given up trying."<sup>1</sup> There is some evidence to indicate that attendance policies do increase attendance levels and, therefore, improve academic performance, at least for some students in lower intelligence levels and older age groups. "One's intelligent test scores (I.Q.) and school achievement are related. Generally the measure of this relationship is the correlation coefficient. The correlations between I.Q. and achievement tend to be positive and moderately high."<sup>2</sup>

Absenteeism has a negative effect on student academic performances. Several researchers (i.e. Finch, 1935; Kersting, 1967; Odell, 1923; Rozelle, 1968) have determined that attendance is related to

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<sup>1</sup> John P. Bean, "The Interaction Effects of GPA on Other Determinants of Student Attrition in a Homogeneous Population," American Educational Research Association, (March 1982), 18.

<sup>2</sup> Bob Algozzine, James Whorton, and James Siders, "The Relationship Between Intelligence and Achievement: A Reconsideration Based on Restricted Groups," Journal of Special Education, 17 (1980), 25.

high grades. The results of their studies have determined that students with higher grade point averages have better attendance rates and results on standardized achievement tests. Grades are related to school attendance. These authors concluded that poor attendance levels cause poor grades rather than poor grades causing poor attendance.

Academic achievement of a student seems to be related to the student's success in school. Measurement of this achievement can be related to scores obtained on basic skills tests, intelligence tests, and grade point averages earned by high school students. "The relationship was investigated between test scores obtained from the Iowa Tests of Basic Skills and the Iowa Tests of Educational Development and the grade point average at the high school and college level. This study investigated the relationship between test scores obtained from two standardized achievement test batteries and academic success (grade point average) at the high school and college level. Thus the predictive relationships between standardized achievement tests and the success of students in high school and college is also of interest."<sup>1</sup> Students who scored above average on

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<sup>1</sup> Rozelle, p. 4.

their intelligence tests of achievement and maintained a high attendance level achieved better grades in their college courses. Tests used in Iowa are the Iowa Test of Basic Skills, (ITBS) and Iowa Test of Educational Development, (ITED). "This study supports the contention that proficiency in basic skills at the high school level, as measured by the ITBS and ITED, does have a significant relationship to high school academic success. This provided evidence that such achievement scores could be appropriately used to provide information which could aid in decisions pertaining to future academic performance."<sup>1</sup>

### Summary

Today, many improvements in education are being considered. We are educating more children through our school programs. In past years many would dropout but with the addition of specialized programs to meet various student needs, more students are staying in school.

A school district's eligibility for funding is determined on the basis of the student's regular attendance in the school program. Therefore to

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<sup>1</sup> Brenda H. Loyd and others, "Relationship of Elementary and Secondary Achievement Test Scores to Later Academic Success," American Education Research Association, (April 1980), 4.

maintain income schools must contend with student absenteeism and dropouts. Concern regarding student attendance level rests on the assumption that for a recipient to take advantage of potential benefits, the student must be present for instruction. With state funding tied to school attendance a concentrated effort to encourage student attendance is a financial necessity. "Schools reason that required school attendance benefits the student before entering into society and that students must learn essentials required to function within that society. Students with good attendance generally receive higher grades, enjoy school more, and have a better chance of employment upon leaving school."<sup>1</sup>

In general, the studies reviewed support the contention that higher grades are earned by students with high attendance records and that poor students can improve their grades by improving their attendance records. The present study sought to clarify this relationship between attendance and grade point average by investigating whether attendance interacts significantly with intelligence scores to affect grade point average.

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<sup>1</sup> Ziomek and Schoenenberger, p. 30.



## CHAPTER THREE

### Procedures

#### Population

Pella Community School District is located in the northeast corner of Marion County. The city of Pella is quite near the center of the district. A small town, Leighton, is located near the eastern boundary, and another small town, Otley, is located in the western part. There are about 12,000 people living in the district. Agriculture and manufacturing are the main industries. About half of the school population are descendants of the Dutch settlers who came to this area in the mid 1800's. The traditions of the Dutch heritage are proudly incorporated into the annual Tulip Festival held annually in May.

The community and people are quite educationally oriented. Much of this is due to the Dutch background, the presence of Central College, and a very stable population. Central College, with an enrollment of 1250 students, is located in Pella. Consequently this tends to influence the students' awareness of the need for education. In the academic arena, students of Pella Community High School are very competitive. Their average intelligence score is approximately 113.

The current population of the school district is quite stable. About 94 percent of the seniors who graduate each year started in the ninth grade at Pella high school. The withdrawal rate runs about six percent, of which approximately half are dropouts and half are transfers. Many students continue their education in some form after high school. Around 55 percent go on to college and about 20 percent go to area technical or trade schools. Those students who do not pursue a higher education after graduation almost always find employment, especially factory work. About five percent are unemployed their first year after graduation, but this five percent includes housewives who are not working. Nearly all who do enter the job market stay in the Pella area.

#### Selection of Sample

Subjects selected for this sample were students at Pella Community High School in 1984-1985. All students enrolled as sophomores, juniors and seniors were used in compiling this data.

Students selected from available permanent records were only those students who are still enrolled in the school system in 1985. Students who had dropped out or moved away were not included. Some students do not have a recorded intelligence test score because they

transferred to this school after this test was administered. They too were not included in this study.

### Sources of Data

Data was collected on three variables, intelligence, attendance levels and grade point average. The Lorge-Thorndike intelligence test for achievement was used to measure mental reasoning. Reliability and validity measures have been taken on this instrument and indicate that this test is a reliable and valid instrument to measure reasoning ability.

The distribution of intelligence scores for Pella Community High School students revealed a median of 112, a mean of 111 and a mode of 118. This distribution has not been affected by extremely high and low scores so a mean intelligence score of 111 was used to calculate an average category for intelligence scale. An intelligence score of 99 and below was considered low category and an intelligence score of 122 and above was considered in the high category.

The frequency of absences at Pella Community High School students had a wide distribution with a mean absence rate of 6.15 days, a median absence of 4 days and a mode absence of 1 day. The extreme scores in the

distribution of absences had an effect on the mean value; therefore, a median score of 4 days absences was used to calculate an average category for attendance levels. A high attendance level was absences of fewer than two days per school year and a low attendance level was an absence rate of more than six days per school year.

All class grades for 1984-85 were figured into a grade point average for one year with the exception of credit for the course in driver education. Physical education classes are recorded with  $1/4$  credit per semester and health class are figured with a  $1/2$  credit per semester, all other classes are tabulated with full credit. A's are recorded with four points, B's are three points, C's are two points, D's are one point and F's are recorded as a zero. All grades are averaged on a semester basis. Grade point average refers to all grades earned during the 1984-85 school year.

#### Collection of Data

Information for this study was obtained from each student's permanent records on file at Pella Community High School. Permission for use of these records was given by the high school principal with an understanding that the results of this study would be made available for analysis and school use.

Information concerning each student was entered onto a Appleworks computer program for later statistical analysis. Information concerning the students birthdate, grade in school, absences and tardiness for the spring semester of 1985, grade point average, I.Q., and absences during the 1984-85 school year of 1984-85 were tabulated and stored for future uses including a study similar to this one.

#### Statistical Treatment

A two way ANOVA was performed using grade point average as the dependent variable and attendance levels and intelligence as the independent variables. The grade point average was figured on a ratio scale and the independent variable of intelligence and attendance were categorized so ANOVA could be used.

## CHAPTER FOUR

### Presentation and Analysis of Data

The focus of this study was (1) to determine whether or not being absent from school influences the student's grade point average and (2) to examine the interaction between the effects of intelligence and attendance levels on grade point averages. Subjects were 308 students in grades 10 through 12 at Pella Community High School during the 1984-85 school year. Data analysis was completed at Drake University using the SPSSX Statistical Package. The data was analyzed via a two-way analysis of variance (ANOVA). This chapter presents and analyzes the data obtained in light of the stated hypothesis.

#### Descriptive Analysis

Table 1 presents the data for the number of students enrolled at Pella Community High School as of 1985 and summarizes the grade distribution of the students.

TABLE 1  
NUMBER OF STUDENTS PER GRADE

Group	Grade 10	11	12
308 total students	113	98	97

The number of days students were absent varied from 0 to 46.5 with a mean of 6.15. Intelligence scores ranged from 65 to 145 with a mean of 111. Grade point averages ranged from .25 to 4.0 with a mean of 2.45 (4.0 scale)

Table 2 presents the data for the intelligence levels of students enrolled at Pella Community High School as of 1985 and summarizes the absences of these students.

TABLE 2  
CELL MEANS AND FREQUENCY FOR  
INTELLIGENCE BY ATTENDANCE

Intelligence scores	Attendance levels		
	high	average	low
low	1.84 (10)	1.75 (31)	1.54 (26)
average	2.64 (51)	2.48 (68)	2.25 (42)
high	3.33 (31)	3.20 (26)	2.82 (23)

Note: The cell mean is 2.47 for a population of 308.

#### Hypothesis Testing

The hypothesis states that there is a significant difference among students' grade point averages based on their intelligence scores and class attendance. This hypothesis was tested using a two-way analysis of variance. Intelligence scores were categorized



as follows: high intelligence, 122 and above; average intelligence, 100 to 121; and low intelligence, 99 and below. Attendance categories were formed as follows: high attendance, 0-1 absence; average attendance, 2-6 absences; and low attendance, 7 and above absences. Analysis of variance indicated a significant difference for both main effects.

Table 3 indicates that the high intelligence group and the high attendance group had the highest grade point averages in their respective categories.

TABLE 3

MEAN SCORES FOR GRADE POINT AVERAGE  
BASED ON INTELLIGENCE AND ATTENDANCE

Intelligence			Attendance		
Group	Mean	N	Group	Mean	N
high	3.14	80	high	2.78	92
average	2.47	161	average	2.43	125
low	1.68	67	low	2.19	91

Table 4 (see next page) presents the F-values for the two-way analysis of variance, indicating an F-value of 85.33 (2,307) with  $p=0.000$  for the factor intelligence and an F-value of 9.47 (2,307) with  $p=0.000$  for the factor attendance. Since the value of  $p$  is less than .05 for both main effects the hypothesis is not rejected. There is a significant difference among students' grade point averages based on their intelligence scores and class attendance records.

Table 4 indicates no significant interaction between the factors intelligence and attendance; therefore, follow-up analyses with a posteriori comparisons were performed to determine which pair(s) of groups created the significant difference in grade point averages.

The Turkey Multiple Comparison Test was used to compute a single value to determine the minimum difference between treatment means to indicate whether or not a significant difference existed. Turkey's HSD procedure was used to determine group differences. A significant difference was found among all pairs for both factors, intelligence and attendance levels. There were significant differences in grade point averages based on intelligence between groups 1 and 2 (low and average intelligence), groups 1 and 3 (low and

high intelligence), and groups 2 and 3 (average and high intelligence). There were significant differences in grade point average based on attendance levels.

TABLE 4  
TWO-WAY ANALYSIS OF VARIANCE FOR GRADE POINT  
AVERAGE BASED ON INTELLIGENCE AND ATTENDANCE

Source of Variation	Sum of Squares	Mean Square	DF	F-value	P
Main					
Affects	84.931	21.233	4	52.684	0.000
Intelligence	68.780	34.390	2	85.331	0.000
Attendance	7.629	3.815	2	9.465	0.000
Two-way interactions					
Intelligence					
by absences	.323	0.081	4	0.200	0.938
Residual	120.503	.403	299		
Total	205.757	0.670	307	26.442	0.000

between groups 1 and 2 (low and average attendance), groups 1 and 3 (low and high attendance), and groups 2 and 3 (average and high attendance).

The most important assumption for using an ANOVA, is that all treatments have homogeneity of variance. A test among the groups indicated that this assumption had not been violated.

The ANOVA indicated that the amount of variance in grade point averages accounted for by intelligence was 41 percent and by attendance eight percent. Regression indicated that 52 percent of the variance in grade point averages was explained by the factors intelligence and attendance level. Regression analysis showed a higher percent of variance accounted for because it used actual data whereas ANOVA used categorized data. ANOVA grouped intelligence and absences scores.

### Conclusions

Attendance levels significantly affect grade point averages. Across all intelligence categories, grade point averages steadily decrease as absences increase. There is no interaction between the effects of attendance levels and intelligence scores on grade point averages.

## CHAPTER FIVE

### Discussion

The purpose of this study was (1) to examine the extent that high school attendance level affects grade point averages, (2) to examine the interaction between the effects of intelligence and attendance levels on grade point averages. Subjects were all students from Pella Community High School in grade 10-12 during the 1984-85 school year. Statistical procedure was an ANOVA using grade point average as the dependent variable with attendance levels and intelligence as the independent variables. It was hypothesized that attendance levels and intelligence significantly affect grade point average. The independent variables were measured on an ordinal scale and the dependent variable was measured using a ratio scale.

The hypothesis stated that there is a significant difference among students' grade point averages based on their intelligence scores and class attendance records. The results of this study support this hypothesis and indicated that there was a significant difference in the grade point averages earned by students depending on their intelligence scores and on their attendance levels. This study clearly shows that the number of days absent from school has a detrimental effect on grade point average. For all intelligence

categories, grade point average decreased as absences increased. All students may significantly improve their grade point average when they make an effort to be present for class instruction and involvement.

There is a need to improve students' attendance levels and for students to recognize the relationship between attendance levels, grade point averages and achievement of educational excellence in their high school years. It is impossible to teach a student who is absent from school. Students, parents and educational staff need to be made more aware of how absences contribute to the problem of lower educational achievement.

Any generalizations from this study should be limited in scope. The obtained results are specific to Pella Community High School and only to the extent that other populations are similar, may these results may apply.

Based on the results of this study, the following areas worthy of further research are suggested:

1. A similar study should be conducted utilizing other schools attendance records so the results of this study could be generalized to more populations.

2. Since only 52 percent of the variance in grade point average was accounted for by attendance levels

and intelligence other variables such as, extracurricular activities, outside-of-school employment, single parent families, age of student, class load, and sports participation should be studied to determine their effect on grade point average.

Parental support is needed to ensure that students take full advantage of the educational opportunities offered during their high school years. Attendance levels must be considered as an important contributing factor to a quality education.

This study shows that students can effectively improve their grade point averages by making a conscientious effort to attend school regularly. High levels of attendance should be a high priority goal for all schools.

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